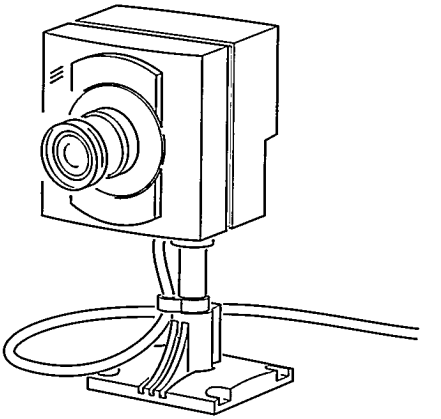
Philips Consumer Electronics

Observation Camera

VCM8175/00T/VCM8176/00T



User manual

PHILIPS

ENGLISH..... 1

FRANÇAIS..... 9

ESPAGÑOL..... 18

PORTUGUÊS..... 27

NEDERLANDS..... 36

DEUTSCH..... 45

ITALIANO..... 54

DANSK..... 63

SVENSKA..... 71

NORSK..... 80

SUOMI..... 89

TECHNICAL SPECIFICATION..... 99

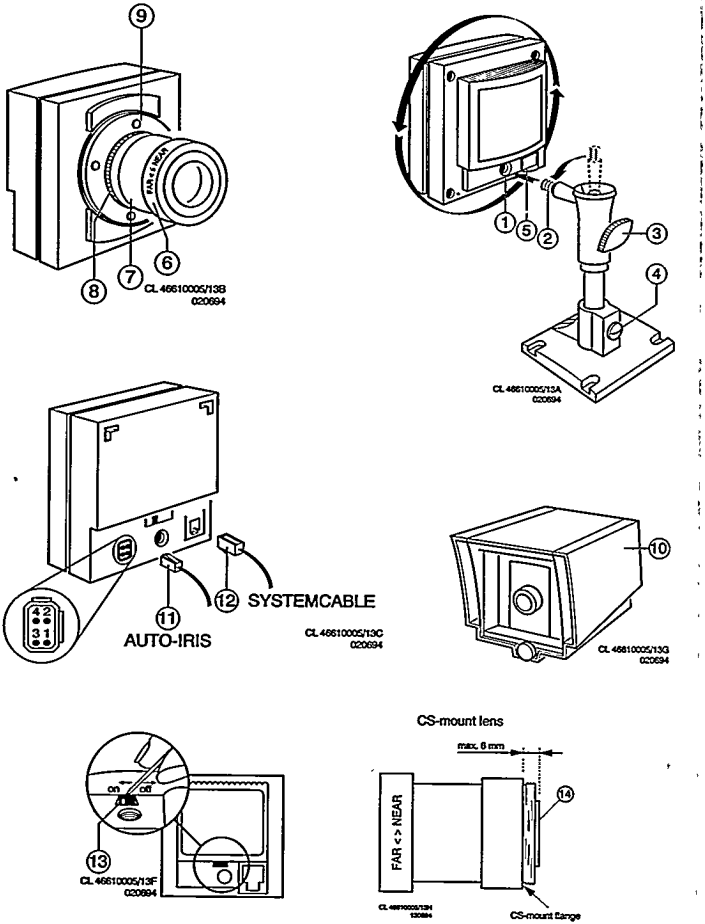

9
FAR <> NEAR
8
7
6
CL 46610005/13B
020694
1
5
2
3
4
CL 46610005/13A
020694
12
SYSTEMCABLE
11
AUTO-IRIS
CL 46610005/13C
020694
10
CL 46610005/13G
020694
CS-mount lens
max. 6 mm
FAR <> NEAR
14
CS-mount flange
on
off
13
CL 46610005/13F
020694

Figure A

Observation Camera

ENGLISH

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

1. this device may not cause harmful interference, and
2. this device must accept any interference received, including interference that may cause undesired operation.

This device is intended to be attached to a receiver that is not used to receive over-the-air broadcast signals. Connection of this device in any other fashion may cause harmful interference to radio communications and is in violation of the FCC Rules, Part 15.

This device complies to FCC rules under test conditions that included use of system cables and connectors between system components. If you have any problems, contact your dealer.

WARNING:

To prevent fire or shock hazard, do not expose this camera to rain or moisture. Do not attempt to disassemble the camera. In order to prevent shock and fire hazard, do not remove screws or covers. There are no user-serviceable parts inside.

The illustrations to which this manual refers, are shown on the front and back jacket flap.

Table of contents

Page

Introduction 2
Installation 2
- Sound
- Position
- Protective cover
- Video out
- The lens
- Cable

Tips for maintenance 8

Introduction

Your new CCD camera is specially developed for use with a special observation system monitor.
It features a sensitive microphone thus registering both images and sound via the monitor.

Installation

Warning:
When a camera or accessory is connected or disconnected, the monitor should always be disconnected from the mains supply.
Only operating the **stand-by** key is not sufficient.

When the mains supply is connected, all camera lines are scanned. The monitor uses this to register the camera configuration of the system and to check whether any modifications have been made.

Sound

If required, the microphone incorporated in the camera, can be switched off, (fig. A-13).
If an intercom box is included in the camera line, the sound of camera and intercom box will be reproduced by the monitor.

Position

First you need to determine where the camera is to be installed. The best results are obtained when the camera looks a little downwards and not into a bright source of light.

- Hold the camera in your hand at the spot where you want to install it and check on the monitor whether the camera does actually cover the required area from that spot.
- Fasten the mounting bracket to the ceiling, the wall, or another even and firm surface by means of the supplied screws and plugs.
- Tighten the knob (fig. A-3) of the ball-and-socket joint.
- Fasten the camera to the bracket by screwing the mounting hole in the back or bottom of the camera (fig. A-1) onto the threaded end (fig. A-2).
- Loosen the knob of the ball-and-socket joint (fig. A-3) and, if necessary, the screw (fig. A-4) on the mounting bracket and direct the camera accurately at the object or area you want to have on screen.
- The knob and screw can be tightened again when the camera is in the required position.

Remark: The camera can also be mounted on any other camera tripod standardly provided with a ¼" 20 UNC thread.

Protective cover

For outdoor use a protective cover (fig. A-10) (optional) has to be used to protect the camera from rain and snow.

Video out

Connect the system cable to the output of the camera (fig. A-12).

The lens

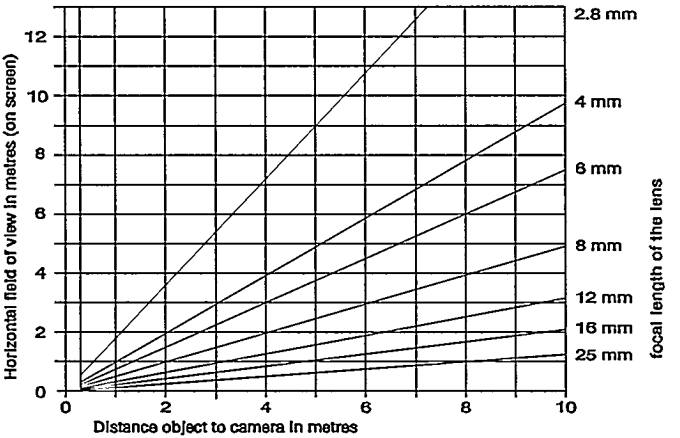
Caution: Do not touch the glass of the lens. This could damage the delicate coating on its surface. If the lens has to be cleaned, use a special lens cleaning tissue, available at any good camera store.

Focus range: The camera supplied with a CS-mount lens does have a manual focus adjustment. This allows you to find an optimal image sharpness for objects between 0.3 metre and infinity by rotating the front ring with the text **FAR NEAR**. You should be aware that the most **FAR** position does not always gives you the best image sharpness for an object far away.

Using a different lens: The CS-mount of the camera allows you to use any one of a wide range of both C-mount and CS-mount lenses with a fixed-iris or manual-iris mechanism. When choosing a C-mount lens you should use a C/CS adapter ring. An auto-iris connector at the back of the camera (fig. A-11) enables you to choose for a passive (or DC-controlles) auto-iris lens.

Caution:
The back side of a CS-mount lens (fig. A-14) should not protrude more than 6mm outside the flange of the CS-mount (11mm for a C-mount lens) otherwise the lens might touch the filter glass in the camera.

You may want to use a lens with a different angle of view and thus a different focal length than the lens supplied with your camera. The next diagram will help you select the focal length, required to cover the object of area you want to be monitored. It shows the width of the scene visible on the screen with lenses of different focal lengths at given distances (camera to object). You can extend the scope of the diagram by simply mulitplying the values at both axes with "x".



Example:
If the distance camera to object is 21 metres: simply mulitply the value distance camera to object for 7 metres with 3. Next multiply the width of the scene, reproduced on the monitor screen by 3 also.

The choice of a lens may affect the sensitivity of your camera. Consult the table below to see which type of lens is required for your particular application.

F-value of lens	Sensitivity (lux)
1.2	1
1.4	1.25
1.6	1.6
1.8	2
2.0	2.5
2.8	5

The given sensitivities are valid for a common lens transmission of 80% and a scene reflection of 75%. In case of an auto-iris lens the maximum illumination level is far more than 100,000 lux (direct sunlight). The apperture of the lens will automatically close when used in a high-light environment.

Automatic iris lenses:

Note: When the camera is used outdoors for longer periods of time (high-light environments) the use of auto-iris lenses is recommended.

The aperture of a passive auto-iris lens is DC-controlled via the 4-pole auto-iris connector at the back of the camera (fig. A-11).
The pin connections of this auto-iris connector is:
pin 1 = control coil -
pin 2 = control coil +
pin 3 = driving coil +
pin 4 = driving coil -

The auto-iris lens cable should be provided with a 4-pole plug to match. Recommended lens cable plugs are:
Chuomusen type E4-191J-100 or E4-151J

Changing lenses: Remove the old lens by turning it counter-clockwise. While unscrewing the lens you should not release the back-focus locking ring (fig. A-9) otherwise you may have to readjust the back-focus of the camera.
Mount the lens by turning it clockwise onto the lens mount of the camera. In case of a C-mount lens you first need to mount a 5mm spacer (C/CS adapter ring).
When an auto-iris lens is mounted, connect the lens cable to the auto-iris connector at the back of the camera (fig. A-11).
Point the camera at the object to be monitored and adjust the manual focus of the lens (if present) for an optimal image sharpness.

Caution:
The CCD sensor in the camera is sensitive to dust. If you remove the lens from the camera you should always point the camera downwards to minimize possible deposit of dust. Never touch the sensor and/or use any cleaning materials. Only use clean, dry air to blow any particle form the surface of the sensor.

When using a manual-iris lens, you should, in principle, set it at its largest aperture. You may however reduce the lens aperture a few stop when the camera is used in a high light intensity environment or when an increased depth of field is required. This smaller lens aperture affects the sensitivity of the camera (see before mentioned table).

Most lens mounts of auto-iris lenses are rotabtable so you can adjust the lens in a desired position without loss of sharpness.

Back-focus adjustment: Adjustment of the back-focus distance of the camera is necessary when the backfocus locking ring has been released of when a particular lens gives an unshap image.

- Set the manual focus adjustment ring of the lens (if present) (fig. A-6) to the FAR position or at infinity.
- Set the manual- iris (if present) to its largest opening.
- Aim the camera at an object at least 15 metres / 45 ft away.
- Loosen the back focus locking ring (fig. A-9) by turing it counter-clockwise.
- Rotate the lens, including the CS-mount ring (fig. A-8), untill the video-image on the monitor is sharp.
- Keeping the lens in place, tighten the back-focus locking ring by turning it clockwise.

Note:
In case of an auto-iris lens:

- The back-focus adjustment is most accurate with the iris set to its largest aperture, so it is recommended to do this adjustment indoors under normal (reading) light circumstances without bright

lightsources positioned withing the field of view of the camera. If not possible you may also use some Neutral Density filters to reduce the illumination level of the camera.

- The lens cable of an auto iris lens prevents the lens being rotated more than 360°. In case it should be necessary, disconnect the iris cable, rotate the lens 360°, reconnect the iris cabel and continue the back-focus adjustment.

Cable

A 4-wire system cable (see specifications) is supplied standardly.

For an optimum picture and sound quality a standard 'twisted-pair' (telephone) cable should be used.
There is an extensive range of plugs and tools available in the hobby and professional trade to extend the cable. Always pay attention that the connection corresponds to figure B.

Remark: Used system cables and connectors are similar to the ones used for telephone, but may not be interconnected.

The maximum distance that can be bridged (without a cable extension adapter) between the monitor and the cameras amounts to 200 meters (150 meters for colour).

Tips for maintenance

Cleaning: The outside of the camera can be cleaned with a moist fluff-free cloth or shammy leather cloth.

When cleaning the objective a special lens cleaning cloth should be used. Do **NOT** use cleaning fluids based on alcohol, methylated spirit, ammonia, etc..

Avoid direct contact with water.

Technical specification

CCD CAMERA	*VCM8175/00T (VCM8176/00T)*
Pick-up device	1/3" (Solid state CCD)
No. of picture elements (H) x (V)	512 x 582 (CCIR) / 512 x 492 (EIA)
Horizontal resolution	> 330 TVL
Light sensitivity	3.5 ~ 30000 lux
Spectral sensitivity range	400 ~ 1000 nm
Signal to noise ratio	> 48 dB
White balance	Auto TTL, 2500 ~ 6500° K
Output A/V	RJ 11 E modular "teleph." socket
Built-in microphone	electret
Lens type	CS-mount
Lens viewing angle	59° H x 46° V (31°H x 23°V)
focal length	4 mm (8 mm)
relative aperture	F 1.2
focus range	1 ~ ∞ m
Power supply	9.6 ~ 27 V DC (via system cable)
Power consumption	2.5 W (at 24 Vdc and excl. auto-iris lens)
System cable	4-wire twisted pair "telephone" cable
Tripod socket	1/4" B.S.W.
Dimensions (WxHxD)	70 x 72.5 x 92 mm (incl. lens)
Weight	255 gr (incl. lens)
Ambient conditions	Ammonia resistent
temperature (Operating/Storage)	-20 ~ +55° C / -25 ~ +70° C
humidity (Operating/Storage)	20% ~ 90% RH / 99% RH

PROTECTIVE CAMERA HOUSING	*VCM1152*
Dimensions (W x H x D)	108 x 119 x 161 mm
Weight	350 gr

Specifications may be changed without notice.

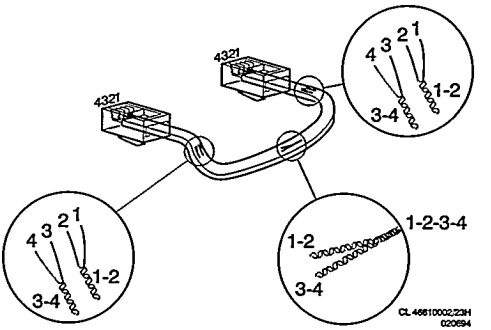

4321
4321
4 3 2 1
1-2
3-4
4 3 2 1
1-2
3-4
1-2-3-4
1-2
3-4
CL 46610002;23H
020694

Figure B

Published by Consumer Electronics ©Copyright reserved Subject to modification 3122 165 21051